ABSTRACT OF THE DISCLOSURE

The present invention relates to a method of cleaning and drying a semiconductor structure in a modified conventional gas etch/rinse or dryer vessel. In an embodiment of the present invention, a semiconductor structure is placed into a first treatment vessel and chemically treated. Following the chemical treatment, the semiconductor structure is transferred directly to a second treatment vessel where it is rinsed with DI water and then dried. The second treatment vessel is flooded with both DI water and a gas that is inert to the ambient, such as nitrogen, to form a DI water bath upon which an inert atmosphere is maintained during rinsing. Next, an inert gas carrier laden with IPA vapor is fed into the second treatment vessel. After sufficient time, a layer of IPA has formed upon the surface of the DI water bath to form an IPA-DI water interface. The semiconductor structure is drawn out of the DI water bath at a rate that allows substantially all DI water, and contaminants therein, to be entrained beneath the IPA-DI water interface. In a second embodiment of the present invention, chemical treatment, rinsing, and drying are carried out in a single vessel. In a third embodiment of the present invention, a retrofitted spray/dump rinser with a lid is used for rinsing and drying according to the method of the present invention.